

Notice of Allowability

Application No.

10/673,058

Examiner

Marissa J. Detschel

Applicant(s)

HWANG ET AL.

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Restriction Response filed March 13, 2006.
2. ☒ The allowed claim(s) is/are 20-28 and 30-35.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 12/29/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group II (Claims 20-28 and 30-35) in the reply filed on March 13, 2006, is acknowledged.

This election has been accepted by the Examiner, and is therefore deemed final.

This application is in condition for allowance except for the presence of claims 1 and 4-19, directed to an invention non-elected without traverse. Accordingly, claims 1 and 4-19 have been cancelled.

Information Disclosure Statement

The information disclosure statement filed on December 29, 2005, has been fully considered by the Examiner.

Response to Amendment

The amendment filed on December 29, 2005, has been fully considered by the Examiner. However, in view of the amendments to the specification filed with the amendment, incorrect page and line numbers were presented by the Applicant when amending to overcome the objections to the specification. In view of these incorrect page and line numbers, an examiner's amendment is being set forth in this Office Action.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

The paragraph beginning on page 1, line 6 has been replaced with:

"This application claims priority of United States Provisional Patent Application Number 60/414,750 (Attorney Docket No. KLA1P068P/P9966P), filed 27 September 2002, which application is incorporated herein by reference in its entirety for all purposes. This application is filed concurrently with and related to the following patent application: United States Nonprovisional Application Number: 10/672,298 (Attorney Docket No. KLA1P067), entitled "METHOD AND APPARATUS USING INTERFEROMETRIC METROLOGY FOR HIGH ASPECT RATIO INSPECTION" naming Hwang et al. as inventors. The above-referenced United States Patent Application is incorporated herein by reference in its entirety for all purposes."

The paragraph beginning on page 12, line 21 has been replaced with:

"The present invention uses techniques disclosed in the currently pending United States Nonprovisional Application Number: 10/672,298 (Attorney Docket No. KLA1P067), entitled "METHOD AND APPARATUS USING INTERFEROMETRIC METROLOGY FOR HIGH ASPECT RATIO INSPECTION" naming Hwang et al. as inventors; to construct a tool having a superset capability for detecting the defects on a wafer. By combining microscopic intensity based type inspection and interferometric inspection on one platform, benefits from the speed of the microscopic intensity based imaging systems and the sensitivity of the interferometric type measurement can be combined."

Allowable Subject Matter

Claims 20-28 and 30-35 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 20, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for performing interferometric inspection comprising a step of adjustably tilting the reference mirror so as to maintain a constant optical path difference between the test and reference beams for a selected portion of the interference image corresponding to a portion of the wafer being inspected, in combination with the rest of the limitations of claim 20.

As to claim 26, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interferometric inspection apparatus comprising a processing module operable to induce movement with a movable stage supporting a wafer so as to align fringes on a time delay integration mode sensor in the direction of the induced movement, in combination with the rest of the limitations of claim 26.

As to claims 30 and 33, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interferometric inspection system or method comprising an adjustable tilted reference mirror to generate fringes having an orientation different from a dominant direction of a repeating pattern on a wafer, in combination with the rest of the limitations of claims 30 and 33.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa J Detschel
March 29, 2006

mgd



HWA (ANDREW) LEE
PRIMARY EXAMINER